



(19)

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(11)

EP 0 639 901 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3.
18.11.1998 Bulletin 1998/47

(51) Int Cl. 6: H04B 17/00, H04B 7/005,
H03G 7/00

(43) Date of publication A2:
22.02.1995 Bulletin 1995/08

(21) Application number: 94306095.4

(22) Date of filing: 18.08.1994

(84) Designated Contracting States:
DE FR GB IT

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(30) Priority: 20.08.1993 JP 206365/93
10.11.1993 JP 281202/93

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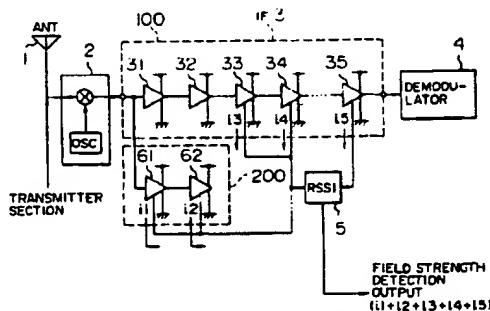
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(54) Radio communication apparatus with circuit for field strength determination

(57) Part of a first signal path (100) for amplifying a signal includes circuits (33b, 34b) for detecting a signal, and a second signal path (200) connected to an input portion of the first signal path includes circuits (61b, 62b) for detecting the signal. A signal strength detector circuit (5) adds outputs from the respective detector circuits in the first and second signal paths. The first signal path has a function of expanding the dynamic range in a

smaller signal region as compared with the second signal path, while the second signal path has a function of expanding the dynamic range in a larger signal region as compared with the first signal path. When a radio transmitted output is variably controlled in a radio transmitter section (TX) based on a field strength detection output for a received signal, the transmitted output is optimized, resulting in minimizing consumed power and unnecessary radiation of radio waves.

FIG. 3



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EUROPEAN SEARCH REPORT

Application Number:
EP 94 30 6095

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IMCL6)
X	EP 0 343 569 A (NOKIA MOBIRA OY) 29 November 1989	1,2,8, 12,13	H04B17/00 H04B7/005 H03G7/00
Y	* the whole document *	1,2,4,6, 7,9,14, 15	
A	---	3,5,11, 16	
X	US 5 129 098 A (MCGIRR ANDREW E ET AL) 7 July 1992	14,19	
Y	* abstract; claim 1 *	1,2,6, 14,15,18	
A	* column 5, line 20 - line 44 *	17	
X	EP 0 530 165 A (ERICSSON TELEFON AB L M) 3 March 1993	14,19	
	* column 6, line 9 - line 41 *		
	* column 7, line 12 - line 17 *		
	* column 7, line 30 - line 49; figures 1,2		
	*		
Y	EP 0 517 305 A (PHILIPS NV) 9 December 1992	1,2,4	
	* column 1, line 3 - line 16 *		
	* column 6, line 5 - line 12; figure 2 *		
Y	GB 2 116 794 A (NIPPON ELECTRIC CO) 28 September 1983	1,2,7,9	
	* abstract *		
	* page 1, line 80 - line 112 *		
Y	US 4 393 513 A (YOKOGAWA TOMOSHISA ET AL) 12 July 1983	14,18	
	* abstract *		

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<p>The present search report has been drawn up for all claims</p>			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	9 September 1998	Harris, E	
CATEGORY OF CITED DOCUMENTS			
X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document			
T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons S: member of the same patent family, corresponding document			



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EUROPEAN SEARCH REPORT

Application Number
EP 94 30 6095

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.)
A	EP 0 248 428 A (NIPPON ELECTRIC CO) 9 December 1987 * abstract * * page 2, line 4-12 * * page 8, line 52 - line 57 * * page 9, line 31 - line 33 * * page 10, line 34 - line 35; figure 9 * -----	3,10,16, 17	
			TECHNICAL FIELDS SEARCHED (Int.Cl.)
The present search report has been drawn up for all claims			
Place of search:	Date of completion of the search	Examiner	
THE HAGUE	9 September 1998	Harris, E	
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background C : non-vention disclosure P : inter-mediate document			